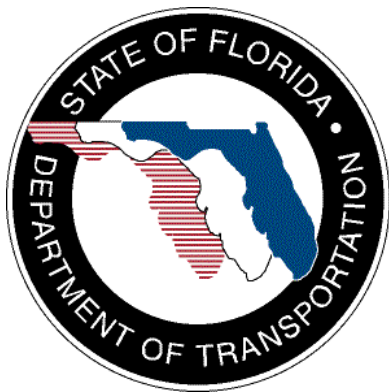


SunGuideSM:

Safety Barrier System Interface Control Document

SunGuide-SB-ICD-1.0.0



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Table of Contents

1.	Scope	1
1.1	Document Identification	1
1.2	Project Overview	1
1.3	Related Documents	2
1.4	Contacts	3
2.	Data	4
2.1	Schema	4
2.1.1	Subsystem communication	5
2.1.2	Device subsystem communication	5
2.2	Examples	6
2.3	Subsystem Schemas	7
2.4	Driver Schemas	9
3.	Notes	11
	Attachment 1	12
A.1	sbStation.xsd	1
A.2	addSbMsg.xsd.....	4
A.3	barrierEventMsg.xsd.....	5
A.4	cancelBarrierEventMsg.xsd	6
A.5	deleteSbMsg.xsd	7
A.6	modifySbMsg.....	8
A.7	onlineStatusMsg.xsd	9
A.8	setOnlineStatusMsg.xsd.....	10
A.9	addSbReq.xsd.....	11
A.10	deleteSbReq.xsd.....	12
A.11	modifySbReq.xsd.....	13
A.12	resetSbPowerReq.xsd.....	14
A.13	resetSbReq.xsd.....	15
A.14	retrieveDataReq.xsd.....	16
A.15	scheduleBarrierEventReq.xsd	18
A.16	setOnlineStatusReq.xsd	19
A.17	setStatusReq.xsd	20
A.18	statusReq.xsd	21
A.19	subscribeReq.xsd	22
A.20	synchronizeClockReq.xsd.....	24
A.21	addSbResp.xsd	25
A.22	deleteSbResp.xsd	26
A.23	modifySbResp.xsd	27
A.24	resetSbPowerResp.xsd	28
A.25	resetSbResp.xsd	29
A.26	retrieveDataResp.xsd	30
A.27	scheduleBarrierEventResp.xsd	33

A.28	setOnlineStatusResp.xsd.....	34
A.29	setStatusResp.xsd.....	35
A.30	statusResp.xsd.....	36
A.31	subscribeResp.xsd.....	37
A.32	synchronizeClockResp.xsd.....	39

List of Figures

Figure 1.1 - High-Level Architectural Concept.....	2
Figure 2.1 - Sample Transaction.....	6

List of Acronyms

ATMS	Advanced Traffic Management System
DOT	Department of Transportation
FDOT	Florida Department of Transportation
IM	Incident Management
ITS	Intelligent Transportation Systems
ITN	Invitation to Negotiate
SB	Safety Barrier
SwRI	Southwest Research Institute
TMC	Traffic Management Center
VS	Video Switching
VW	Video Wall
XML	Extensible Markup Language

REVISION HISTORY

Revision	Date	Changes
1.0.0	June 13, 2005	Initial Release

1. Scope

1.1 Document Identification

This Interface Control Document (ICD) describes the interface between individual SunGuide clients and the Safety Barrier (SB) subsystem and between the SB subsystem and the associated drivers. The general base architecture of the XML communications including connection information, byte order and base transaction classes is delineated in the general ICD. This ICD defines Extensible Markup Language (XML) schemas upon which XML requests shall be based in communicating amongst the various processes. Refer to the SunGuide-General-ICD-1.0.0 document for details regarding data transfer.

1.2 Project Overview

The Florida Department of Transportation (FDOT) is conducting a program that is developing SunGuideSM software. The SunGuideSM software is a set of Intelligent Transportation System (ITS) software that allows the control of roadway devices as well as information exchange across a variety of transportation agencies. The goal of the SunGuideSM software is to have a common software base that can be deployed throughout the state of Florida. The SunGuideSM software development effort is based on ITS software available from both the states of Texas and Maryland; significant customization of the software is being performed as well as the development of new software modules. The following figure provides a graphical view of the software to be developed:

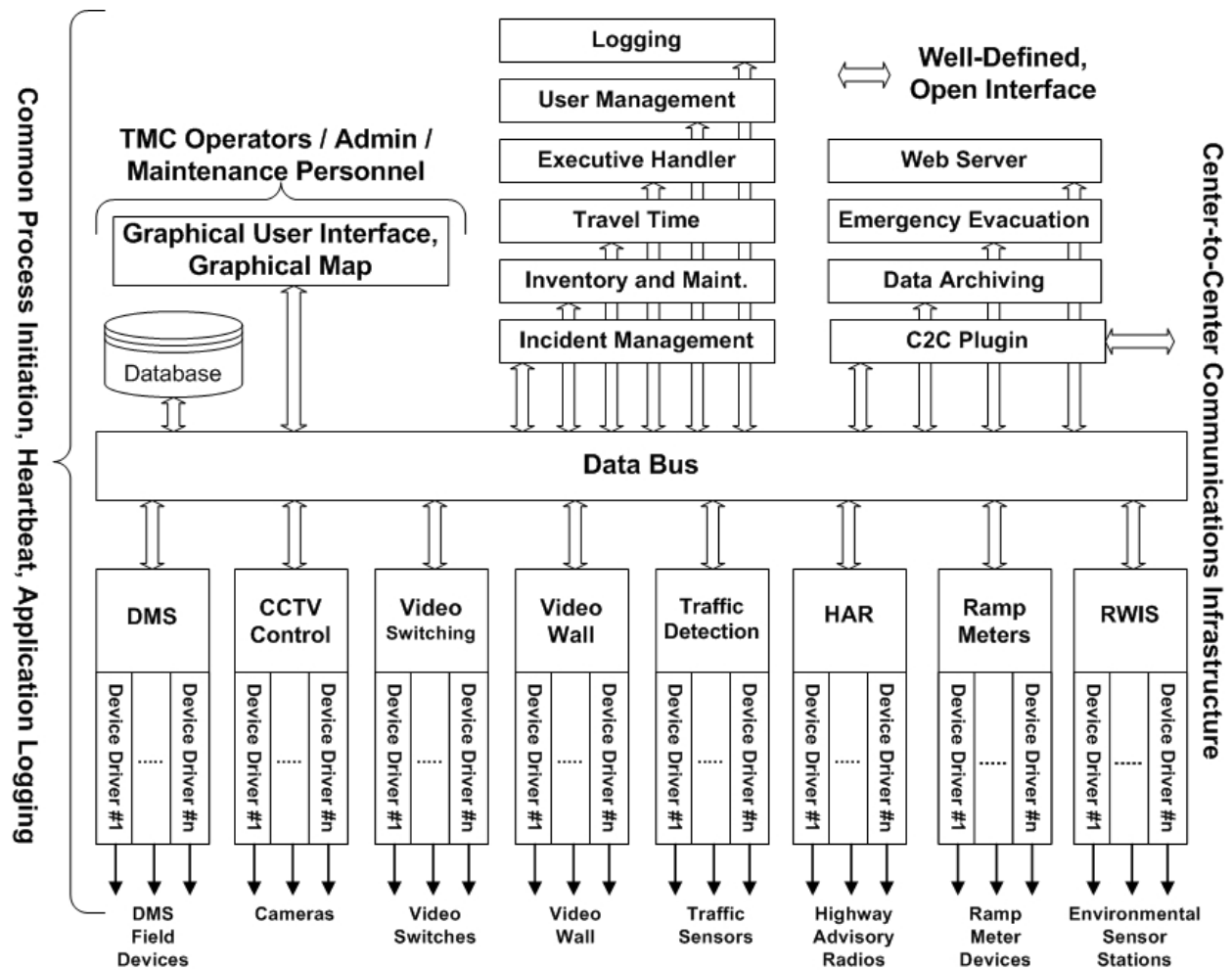


Figure 1.1 - High-Level Architectural Concept

The SunGuideSM development effort spans approximately two years. After the development, the software will be deployed to a number of Districts and Expressway Authorities throughout Florida and support activities will be performed.

1.3 Related Documents

The following documents were used to develop this document:

- SwRI Qualification Response: *Response to the Invitation to Negotiate (ITN): Statewide Transportation Management Center Software Library System, Negotiation Number: ITN-DOT-02/03-9025-RR*, SwRI Proposal No. 10-35924, dated: November 18, 2002.
- SwRI Technical Proposal: *Technical Proposal for Invitation to Negotiate (ITN): Statewide Transportation Management Center Software Library System, Negotiation Number: ITN-DOT-02/03-9025-RR*, SwRI Proposal No. 10-35924, dated: January 31, 2003.

- SwRI Cost Proposal: *Cost Proposal for Invitation to Negotiate (ITN): Statewide Transportation Management Center Software Library System, Negotiation Number: ITN-DOT-02/03-9025-RR*, SwRI Proposal No. 10-35924, dated: January 31, 2003.
- SwRI BAFO letter: *Southwest Research Institute[®] Proposal No. 10-35924, “Invitation to Negotiate (ITN): Statewide Transportation Management Center Software Library System”, Reference: Negotiation Number: ITN-DOT-02/03-9025-RR*, dated: May 5, 2003.
- FDOT procurement document: *Invitation To Negotiate (ITN), Negotiation Number: ITN-DOT-02/03-9025-RR, Statewide Transportation Management Center Software Library System*, dated: October 21, 2002.
- FDOT Scope of Services: *Statewide Transportation Management Center Software Library System: Scope of Services*, September 22, 2003.
- FDOT Requirements Document: *Statewide Transportation Management Center Software Library System: Requirements Specification*, June 3, 2003.
- Southwest Research Institute, *TMC Software Study*, November 15, 2001.
- Southwest Research Institute, *Introduction to an Operational Concept For the Florida Statewide Library*, FDOT – OCD – 1.0, March 31, 2002.
- World Wide Web Consortium (W3) website: <http://www.w3.org>.
- SunGuideSM Project website: <http://sunguide.datasys.swri.edu>.

1.4 Contacts

The following are contact persons for the SunGuideSM software project:

- Elizabeth Birriel, ITS Central Office, elizabeth.birriel@dot.state.fl.us, 850-410-5606
- Liang Hsia, FDOT Project Manager, liang.hsia@dot.state.fl.us, 850-410-5615
- John Bonds, Senior ITS Specialist, jbonds@pbsj.com, 408-873-2514
- David Chang, ITS Specialist, David.Chang@dot.state.fl.us, 850-410-5622
- Steve Dellenback, SwRI Project Manager, sdellenback@swri.org, 210-522-3914
- Robert Heller, SwRI Software Project Manager, rheller@swri.org, 210-522-3824

The following are contacts that will be used by the SunGuideSM software project team to assure consistency with other FDOT projects and FDOT procedures:

- David Lambert, University of North Florida, RWIS, jlambert@unf.edu, 904-620-3881
- Bob Colins, PBS&J, Emergency Evacuation, bobcolins@pbsj.com, 850-575-1800
- John Fain, FDOT, Comptroller, john.fain@dot.state.fl.us, 850-921-7332
- Leslie Jacobson, PB Farradyne, Ramp Metering, jacobsonl@pbworld.com, 206-382-5290

2. Data

The following sections detail the XML transactions that can be exchanged between client and server applications.

2.1 Schema

The schemas for these transactions may be located in the Schemas1.0 directory. The objects directory contains common data schemas that are used by the various requests, messages, and responses. Schemas are organized in the following tree structure:

- sb
 - messages
 - [addSbMsg.xsd](#)
 - [barrierEventMsg.xsd](#)
 - [cancelBarrierEventMsg.xsd](#)
 - [deleteSbMsg.xsd](#)
 - [modifySbMsg.xsd](#)
 - [onlineStatusMsg.xsd](#)
 - [setOnlineStatusMsg.xsd](#)
 - objects
 - [sbStation.xsd](#)
 - requests
 - [addSbReq.xsd](#)
 - [deleteSbReq.xsd](#)
 - [modifySbReq.xsd](#)
 - [resetSbPowerReq.xsd](#)
 - [resetSbReq.xsd](#)
 - [retrieveDataReq.xsd](#)
 - [scheduleBarrierEventReq.xsd](#)
 - [setOnlineStatusReq.xsd](#)
 - [setStatusReq.xsd](#)
 - [statusReq.xsd](#)
 - [subscribeReq.xsd](#)
 - [synchronizeClockReq.xsd](#)
 - responses
 - [addSbResp.xsd](#)
 - [deleteSbResp.xsd](#)
 - [modifySbResp.xsd](#)
 - [resetSbPowerResp.xsd](#)
 - [resetSbResp.xsd](#)
 - [retrieveDataResp.xsd](#)
 - [scheduleBarrierEventResp.xsd](#)
 - [setOnlineStatusResp.xsd](#)
 - [setStatusResp.xsd](#)
 - [statusResp.xsd](#)
 - [subscribeResp.xsd](#)
 - [synchronizeClockResp.xsd](#)

Requests may be sent from a client to a subsystem or from a subsystem to a driver. Responses may be sent from a driver to a subsystem or a subsystem to a client. A message can be sent from any process to another process.

2.1.1 Subsystem communication

Initial communication to a subsystem is described in the general ICD. For SB, the list of safety barrier devices in the system is retrieved from the database on startup. Once a client has initiated the connection to SB, the following requests may be made:

- Safety barrier devices may be added, modified or deleted,
- The operational status of a device may be modified,
- Devices may be reset or have the clock synchronized, or
- A list of devices and current barrier events may be retrieve.

The following table shows the various subscriptions a client may request. The last column shows the XML updates that will be received if a client has subscribed to this data.

Subscription	Description	Updates Received
stationData	New or modified queues, deleted queues.	addSbResp, modifySbResp, deleteSbResp
eventData	Receive notification that a barrier event has been created or rest.	barrierEventMsg, cancelBarrierEventMsg
statusData	Receive notification that the status of a device has changed.	setOnlineStatusResp, onlineStatusMsg, setStatusResp, statusResp, resetSbResp
userData	Receive notification that user permissions have been modified.	updateSystemDataMsg

2.1.2 Device subsystem communication

Initial communication from a subsystem to a driver is described in the general ICD. For SB, an addSbReq is sent to each driver for each safety barrier device which belongs to that driver.

As in Section 2.1.1, additional SBs may be added, existing SBs may be modified, deleted, or modify the online status.

2.2 Examples

For example, if a client wishes to add a device to the system, the client sends an addSbReq to the subsystem. Once the subsystem has verified this is a new device, the request is then forwarded to the appropriate driver. The driver adds the device and sends an addSbResp to the subsystem. The subsystem then sends this response back to the appropriate client and to clients who have subscribed to device data.

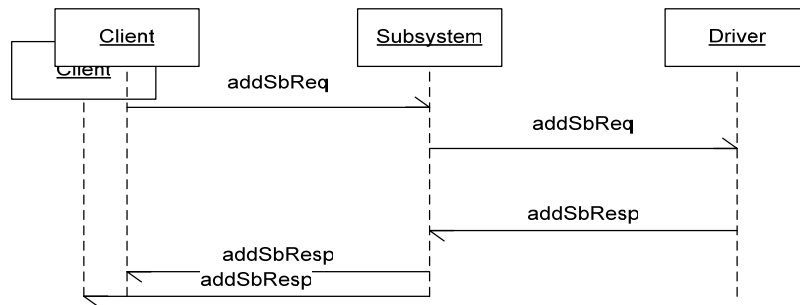


Figure 2.1 - Sample Transaction

The tables below show which requests can be sent from client to subsystem. Requests and responses that are sent to and received from other subsystems for device control will depend upon the other subsystems. The responses sent from subsystem to client are also specified. Messages are sent instead of requests when a response is not required.

2.3 Subsystem Schemas

FC (From client), TC (To client), TD (To driver), FD (From driver)

Usage Description	Requests	FC	TD	Responses	FD	TC	Messages	TD	FD	TC
Used to add a new device to the system.	addSbReq	X	X	addSbResp	X	X	addSbMsg	X		
Used to send notification that a barrier event has occurred.							barrierEventMsg		X	X
Used to send notification that a barrier event has been canceled.							cancelBarrierEventMsg		X	X
Used to delete a device from the system.	deleteSbReq	X	X	deleteSbResp	X	X	deleteSbMsg	X		
Used to modify an existing device.	modifySbReq	X	X	modifySbResp	X	X	modifySbMsg	X		
Used to send an update of a device's operational status.						X	onlineStatusMsg			
Used to request a power reset of a device.	resetSbPowerReq	X	X	resetSbPowerResp	X	X				
Used to request a reset of the lamp and switch settings.	resetSbReq	X	X	resetSbResp	X	X				

Usage Description	Requests	FC	TD	Responses	FD	TC	Messages	TD	FD	TC
Used to retrieve the system's data. Data includes device status, device configuration data, barrier events and users.	retrieveDataReq	X		retrieveDataResp		X				
Used to schedule a barrier event for a device.	scheduleBarrierEventReq	X	X	scheduleBarrierEventResp	X	X				
Used to set the operational status of a device.	setOnlineStatusReq	X	X	setOnlineStatusResp	X	X	setOnlineStatusMsg	X		
Used to set the lamp and switch state of a device.	setStatusReq	X	X	setStatusResp	X	X				
Used to request the status of a device.	statusReq	X	X	statusResp	X	X				
Used to subscribe to updates from the system. Data includes device status, device configuration data, barrier events and users.	subscribeReq	X		subscribeResp		X				
Used to request a station set its internal clock to a particular time.	synchronizeClockReq	X	X	synchronizeClockResp	X	X				

2.4 Driver Schemas

TD (To driver), FD (From driver)

Usage Description	Requests	TD	Responses	FD	Messages	TD	FD
Used to add a new device to the system.	addSbReq	X	addSbResp	X	addSbMsg	X	
Used to send notification that a barrier event has occurred.					barrierEventMsg		X
Used to send notification that a barrier event has been canceled.					cancelBarrierEventMsg		X
Used to delete a device from the system.	deleteSbReq	X	deleteSbResp	X	deleteSbMsg	X	
Used to modify an existing device.	modifySbReq	X	modifySbResp	X	modifySbMsg	X	
Used to request a power reset of a device.	resetSbPowerReq	X	resetSbPowerResp	X			
Used to request a reset of the lamp and switch settings.	resetSbReq	X	resetSbResp	X			
Used to schedule a barrier event for a device.	scheduleBarrierEventReq	X	scheduleBarrierEventResp	X			

Usage Description	Requests	TD	Responses	FD	Messages	TD	FD
Used to set the operational status of a device.	setOnlineStatusReq	X	setOnlineStatusResp	X	setOnlineStatusMsg	X	
Used to set the lamp and switch state of a device.	setStatusReq	X	setStatusResp	X			
Used to request the status of a device.	statusReq	X	statusResp	X			
Used to request a station set its internal clock to a particular time.	synchronizeClockReq	X	synchronizeClockResp	X			

3. Notes

Information about XML and schemas can be found at the World Wide Web Consortium (W3) website at <http://www.w3.org>.

Attachment 1

SB XML Schema

A.1 sbStation.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:include schemaLocation="../../common/objects/address.xsd"/>
  <xs:include schemaLocation="../../common/objects/equipmentLocation.xsd"/>
  <xs:include schemaLocation="../../common/objects/equipmentStatus.xsd"/>
  <xs:include schemaLocation="../../common/objects/common.xsd"/>
  <xs:element name="sbStation">
    <xs:annotation>
      <xs:documentation>Safety barrier station object, contains information to
communicate with a particular safety barrier station.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:sequence>
        <xs:element ref="id"/>
        <xs:element name="driverName">
          <xs:annotation>
            <xs:documentation>The name of the driver to which this device is
connected.</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="plcId">
          <xs:annotation>
            <xs:documentation>The identifying number of the
PLC.</xs:documentation>
          </xs:annotation>
          <xs:simpleType>
            <xs:restriction base="xs:int">
              <xs:minInclusive value="0"/>
              <xs:maxInclusive value="65025"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
        <xs:element name="unitId">
          <xs:annotation>
            <xs:documentation>The identifying number of the safety barrier
station.</xs:documentation>
          </xs:annotation>
          <xs:simpleType>
            <xs:restriction base="xs:int">
              <xs:minInclusive value="0"/>
              <xs:maxInclusive value="65025"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

```

    </xs:element>
    <xs:element ref="commAddress"/>
    <xs:element ref="equipmentLocation"/>
    <xs:element ref="status"/>
  </xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="sbStatus" type="equipmentStatus">
  <xs:annotation>
    <xs:documentation>The current operational status of the safety
barrier.</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:simpleType name="BarrierStatus">
  <xs:annotation>
    <xs:documentation>A type that reports whether a barrier event is in
process.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:enumeration value="Normal"/>
    <xs:enumeration value="BarrierEvent"/>
    <xs:enumeration value="Failed"/>
  </xs:restriction>
</xs:simpleType>
<xs:element name="status">
  <xs:annotation>
    <xs:documentation>The current status information for the safety
barrier.</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="sbStatus"/>
      <xs:element ref="barrierState"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="barrierState">
  <xs:annotation>
    <xs:documentation>Shows the barrier state of the safety
barrier.</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="lampState"/>
      <xs:element ref="switchState"/>
      <xs:element name="diagnosticString" type="xs:string" minOccurs="0">
        <xs:annotation>
          <xs:documentation>String representing additional diagnostic information,
if available.</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

```

        </xs:annotation>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="switchState" type="BarrierStatus">
  <xs:annotation>
    <xs:documentation>Whether or not the switch reports a barrier
event.</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="lampState" type="BarrierStatus">
  <xs:annotation>
    <xs:documentation>Whether or not the lamp reports a barrier
event.</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="event">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="id"/>
      <xs:element ref="lampState"/>
      <xs:element ref="switchState"/>
      <xs:element name="eventTime" type="xs:date">
        <xs:annotation>
          <xs:documentation>The time requested for a barrier event to occur. Must
be in the future, or no event will occur.</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="test" type="xs:boolean">
        <xs:annotation>
          <xs:documentation>Whether this is a test event or
not.</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:schema>
```

A.2 addSbMsg.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="addSbMsg">
    <xs:annotation>
      <xs:documentation>Adds one device to a device driver</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="MessageType">
          <xs:sequence>
            <xs:element ref="sbStation"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.3 barrierEventMsg.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="barrierEventMsg">
    <xs:annotation>
      <xs:documentation>Message sent for a barrier event occurring for a
station.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="MessageType">
          <xs:sequence>
            <xs:element ref="event"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```


A.4 cancelBarrierEventMsg.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="cancelBarrierEventMsg">
    <xs:annotation>
      <xs:documentation>Message sent for a barrier event having been
cancelled.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="MessageType">
          <xs:sequence>
            <xs:element ref="id"/>
            <xs:element name="eventTime" type="xs:date">
              <xs:annotation>
                <xs:documentation>The time requested for a barrier event to occur.
Must be in the future, or no event will occur.</xs:documentation>
              </xs:annotation>
            </xs:element>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.5 deleteSbMsg.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/common.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:element name="deleteSbMsg">
    <xs:annotation>
      <xs:documentation>Message to send to driver to delete
device.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="MessageType">
          <xs:sequence>
            <xs:element ref="id"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.6 modifySbMsg

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="modifySbMsg">
    <xs:annotation>
      <xs:documentation>Sends modified device information to a device
driver</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="MessageType">
          <xs:sequence>
            <xs:element ref="sbStation"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.7 onlineStatusMsg.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:include schemaLocation="../objects/sbStation.xsd"/>
  <xs:element name="setOnlineStatusMsg">
    <xs:annotation>
      <xs:documentation>Set the online status for a station.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element ref="id"/>
            <xs:element ref="strOpStatus"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.8 setOnlineStatusMsg.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="setOnlineStatusMsg">
    <xs:annotation>
      <xs:documentation>Set the online status for a station.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element ref="id"/>
            <xs:element ref="strOpStatus"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.9 addSbReq.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="addSbReq">
    <xs:annotation>
      <xs:documentation>The request is sent to add a safety barrier to the
system.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element ref="sbStation"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.10 deleteSbReq.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="deleteSbReq">
    <xs:annotation>
      <xs:documentation>The request is sent to delete a safety barrier from the
system.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element ref="id"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.11 modifySbReq.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="modifySbReq">
    <xs:annotation>
      <xs:documentation>The request is sent to modify a safety barrier in the
system.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element ref="sbStation"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```


A.12 resetSbPowerReq.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:include schemaLocation="../objects/sbStation.xsd"/>
  <xs:element name="resetSbPowerReq">
    <xs:annotation>
      <xs:documentation>Request a station do a complete power
reset.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element ref="id"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.13 resetSbReq.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="resetSbReq">
    <xs:annotation>
      <xs:documentation>Request a station reset its lamp and switch to non-barrier
event position (normal).</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element ref="id"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.14 retrieveDataReq.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:element name="retrieveDataReq">
    <xs:annotation>
      <xs:documentation>A request sent by client to retrieve data from the
system</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element name="stationData" type="xs:boolean" default="false"
minOccurs="0">
              <xs:annotation>
                <xs:documentation>True if the client requests to retrieve a list of
stations.</xs:documentation>
              </xs:annotation>
            </xs:element>
            <xs:element name="eventData" type="xs:boolean" default="false"
minOccurs="0">
              <xs:annotation>
                <xs:documentation>Data updates for barrier
events.</xs:documentation>
              </xs:annotation>
            </xs:element>
            <xs:element name="userData" type="xs:boolean" default="false"
minOccurs="0">
              <xs:annotation>
                <xs:documentation>True if the client requests to retrieve a list of
users.</xs:documentation>
              </xs:annotation>
            </xs:element>
            <xs:element name="statusList" type="xs:boolean" default="false"
minOccurs="0">
              <xs:annotation>
                <xs:documentation>True if the client requests to retrieve a list of
status data.</xs:documentation>
              </xs:annotation>
            </xs:element>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

```
</xs:element>  
</xs:schema>
```

A.15 scheduleBarrierEventReq.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:element name="scheduleBarrierEventReq">
    <xs:annotation>
      <xs:documentation>Request to schedule a barrier event for a station--used for
testing.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element ref="id"/>
            <xs:element name="eventTime" type="xs:date">
              <xs:annotation>
                <xs:documentation>The time requested for a barrier event to occur.
Must be in the future, or no event will occur.</xs:documentation>
              </xs:annotation>
            </xs:element>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.16 setOnlineStatusReq.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:include schemaLocation="../objects/sbStation.xsd"/>
  <xs:element name="setOnlineStatusReq">
    <xs:annotation>
      <xs:documentation>Set the online status for a station.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element ref="id"/>
            <xs:element ref="strOpStatus"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.17 setStatusReq.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="setStatusReq">
    <xs:annotation>
      <xs:documentation>Request to modify the lamp and switch status of a
station.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element ref="id"/>
            <xs:element ref="lampState"/>
            <xs:element ref="switchState"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.18 statusReq.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="statusReq">
    <xs:annotation>
      <xs:documentation>Request the current status of a station.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element ref="id"/>
            <xs:element name="statusType">
              <xs:annotation>
                <xs:documentation>The type of status requested, basic or
  extended. Extended status contains an additional diagnostic string that may be set for a
  barrier event.</xs:documentation>
              </xs:annotation>
              <xs:simpleType>
                <xs:restriction base="xs:string">
                  <xs:enumeration value="basic"/>
                  <xs:enumeration value="extended"/>
                </xs:restriction>
              </xs:simpleType>
            </xs:element>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```


A.19 subscribeReq.xsd

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:element name="subscribeReq">
    <xs:annotation>
      <xs:documentation>A request sent by client to subscribe to data updates from the
system</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element name="stationData" type="xs:boolean" default="false"
minOccurs="0">
              <xs:annotation>
                <xs:documentation>Data updates for station configuration items
(add, modify, delete).</xs:documentation>
              </xs:annotation>
            </xs:element>
            <xs:element name="eventData" type="xs:boolean" default="false"
minOccurs="0">
              <xs:annotation>
                <xs:documentation>Data updates for barrier
events.</xs:documentation>
              </xs:annotation>
            </xs:element>
            <xs:element name="statusData" type="xs:boolean" default="false"
minOccurs="0">
              <xs:annotation>
                <xs:documentation>Data updates when status information from a
station is updated.</xs:documentation>
              </xs:annotation>
            </xs:element>
            <xs:element name="userData" type="xs:boolean" default="false"
minOccurs="0">
              <xs:annotation>
                <xs:documentation>Data updates when user permissions are
modified.</xs:documentation>
              </xs:annotation>
            </xs:element>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>

```

```
</xs:element>  
</xs:schema>
```

A.20 synchronizeClockReq.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../../common/objects/id.xsd"/>
  <xs:element name="synchronizeClockReq">
    <xs:annotation>
      <xs:documentation>Request to synchronize the clock on a barrier
station.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="RequestType">
          <xs:sequence>
            <xs:element ref="id"/>
            <xs:element name="clockTime" type="xs:date">
              <xs:annotation>
                <xs:documentation>The time to
which the station should set its internal clock.</xs:documentation>
              </xs:annotation>
            </xs:element>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

A.21 addSbResp.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="addSbResp">
    <xs:annotation>
      <xs:documentation>Response to an addSbReq to add a safety barrier
station.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="ResponseType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="sbData">
    <xs:annotation>
      <xs:documentation>The data for this response.</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="responseData">
        <xs:sequence>
          <xs:element ref="sbStation"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:schema>
```

A.22 deleteSbResp.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:element name="deleteSbResp">
    <xs:annotation>
      <xs:documentation>Response to a deleteSbReq to delete a safety barrier
station.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="ResponseType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="sbData">
    <xs:annotation>
      <xs:documentation>The data for this response.</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="responseData">
        <xs:sequence>
          <xs:element ref="id"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:schema>
```

A.23 modifySbResp.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="modifySbResp">
    <xs:annotation>
      <xs:documentation>Response to a modifySbReq to modify a safety barrier
station.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="ResponseType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="sbData">
    <xs:annotation>
      <xs:documentation>The data for this response.</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="responseData">
        <xs:sequence>
          <xs:element ref="sbStation"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:schema>
```

A.24 resetSbPowerResp.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:element name="resetSbPowerResp">
    <xs:annotation>
      <xs:documentation>Response to a resetSbPowerReq request the safety barrier
perform a power reset.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="ResponseType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="resetSbPowerData">
    <xs:annotation>
      <xs:documentation>The data for this response.</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="responseData">
        <xs:sequence>
          <xs:element ref="id"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:schema>
```

A.25 resetSbResp.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/id.xsd"/>
  <xs:element name="resetSbResp">
    <xs:annotation>
      <xs:documentation>Response to a resetSbReq request to reset the safety
barrier.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="ResponseType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="resetSbData">
    <xs:annotation>
      <xs:documentation>The data for this response.</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="responseData">
        <xs:sequence>
          <xs:element ref="id"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:schema>
```


A.26 retrieveDataResp.xsd

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="retrieveDataResp">
    <xs:annotation>
      <xs:documentation>Response received for a retrieve data
request</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="ResponseType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="retrieveData" abstract="0">
    <xs:annotation>
      <xs:documentation>The response data for a retrieve data
request</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="responseData">
        <xs:sequence>
          <xs:element name="stationData" minOccurs="0">
            <xs:annotation>
              <xs:documentation>A list containing zero or more
stations.</xs:documentation>
            </xs:annotation>
            <xs:complexType>
              <xs:sequence>
                <xs:element ref="sbStation" minOccurs="0"
maxOccurs="unbounded"/>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
          <xs:element name="eventData" minOccurs="0">
            <xs:annotation>
              <xs:documentation>A list of zero or more events currently in the
system.</xs:documentation>
            </xs:annotation>
            <xs:complexType>
              <xs:sequence>
                <xs:element ref="event" minOccurs="0" maxOccurs="unbounded"/>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>

```

```

        </xs:complexType>
    </xs:element>
    <xs:element name="userData" minOccurs="0">
        <xs:annotation>
            <xs:documentation>A list containing one or more
users.</xs:documentation>
        </xs:annotation>
        <xs:complexType>
            <xs:sequence>
                <xs:element name="user" minOccurs="0"
maxOccurs="unbounded">
                    <xs:annotation>
                        <xs:documentation>A user within the cctv
system.</xs:documentation>
                    </xs:annotation>
                    <xs:complexType>
                        <xs:sequence>
                            <xs:element name="privileges">
                                <xs:annotation>
                                    <xs:documentation>Contains the privileges for the
user.</xs:documentation>
                                </xs:annotation>
                                <xs:complexType>
                                    <xs:attribute name="stationData" type="xs:boolean"
use="required"/>
                                    <xs:attribute name="eventData" type="xs:boolean"
use="required"/>
                                    <xs:attribute name="statusData" type="xs:boolean"
use="required"/>
                                    <xs:attribute name="userData" type="xs:boolean"
use="required"/>
                                    <xs:attribute name="configStation" type="xs:boolean"
use="required"/>
                                    <xs:attribute name="setStatus" type="xs:boolean"
use="required"/>
                                    <xs:attribute name="resetSb" type="xs:boolean"
use="required"/>
                                    <xs:attribute name="scheduleEvent"
type="xs:boolean" use="required"/>
                                </xs:complexType>
                            </xs:element>
                        </xs:sequence>
                        <xs:attribute name="name" type="identifier" use="required"/>
                    </xs:complexType>
                </xs:element>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="statusList" minOccurs="0">

```

```

    <xs:annotation>
      <xs:documentation>The status information for the safety barrier
stations.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:sequence>
        <xs:element name="sbStation" minOccurs="0"
maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element ref="id"/>
              <xs:element ref="status"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
</xs:schema>
```

A.27 scheduleBarrierEventResp.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="scheduleBarrierEventResp">
    <xs:annotation>
      <xs:documentation>Response to a scheduleBarrierEventReq to request the station
        schedule a barrier event for test purposes.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="ResponseType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="eventData">
    <xs:annotation>
      <xs:documentation>The data for this response.</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="responseData">
        <xs:sequence>
          <xs:element ref="id"/>
          <xs:element name="eventTime" type="xs:date">
            <xs:annotation>
              <xs:documentation>The time for which the event is
                scheduled.</xs:documentation>
            </xs:annotation>
          </xs:element>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:schema>
```

A.28 setOnlineStatusResp.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="setOnlineStatusResp">
    <xs:annotation>
      <xs:documentation>Response to a setOnlineStatusReq to request modify station's
current operational status.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="ResponseType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="onlineStatusData">
    <xs:annotation>
      <xs:documentation>The data for this response.</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="responseData">
        <xs:sequence>
          <xs:element ref="id"/>
          <xs:element ref="sbStatus"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:schema>
```

A.29 setStatusResp.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="setStatusResp">
    <xs:annotation>
      <xs:documentation>Response to a setStatusReq to request the station reset the
switch and lamp state.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="ResponseType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="setStatusData">
    <xs:annotation>
      <xs:documentation>The data for this response.</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="responseData">
        <xs:sequence>
          <xs:element ref="id"/>
          <xs:element ref="lampState"/>
          <xs:element ref="switchState"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:schema>
```

A.30 statusResp.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../objects/sbStation.xsd"/>
  <xs:element name="statusResp">
    <xs:annotation>
      <xs:documentation>Response to a statusReq to request the station's current
status.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="ResponseType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="statusData">
    <xs:annotation>
      <xs:documentation>The data for this response.</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="responseData">
        <xs:sequence>
          <xs:element ref="id"/>
          <xs:element ref="status"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:schema>
```

A.31 subscribeResp.xsd

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../common/objects/common.xsd"/>
  <xs:element name="subscribeResp">
    <xs:annotation>
      <xs:documentation>Response received for a subscribe
request</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="ResponseType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="subscribeData">
    <xs:annotation>
      <xs:documentation>The response data for a subscribe
request</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="responseData">
        <xs:sequence>
          <xs:element name="stationData" type="xs:boolean" default="false"
minOccurs="0">
            <xs:annotation>
              <xs:documentation>Data updates for station configuration items (add,
modify, delete).</xs:documentation>
            </xs:annotation>
          </xs:element>
          <xs:element name="eventData" type="xs:boolean" default="false"
minOccurs="0">
            <xs:annotation>
              <xs:documentation>Data updates for barrier
events.</xs:documentation>
            </xs:annotation>
          </xs:element>
          <xs:element name="statusData" type="xs:boolean" default="false"
minOccurs="0">
            <xs:annotation>
              <xs:documentation>Data updates when status information from a
station is updated.</xs:documentation>
            </xs:annotation>
          </xs:element>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>

```



```
<xs:element name="userData" type="xs:boolean" default="false"
minOccurs="0">
  <xs:annotation>
    <xs:documentation>Data updates when user permissions are
modified.</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
</xs:schema>
```

A.32 synchronizeClockResp.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="../../../common/objects/transaction.xsd"/>
  <xs:include schemaLocation="../../../common/objects/id.xsd"/>
  <xs:element name="synchronizeClockResp">
    <xs:annotation>
      <xs:documentation>Response to a synchronizeClockReq to request the
station set its internal clock.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
      <xs:complexContent>
        <xs:extension base="ResponseType"/>
      </xs:complexContent>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="clockData">
    <xs:annotation>
      <xs:documentation>The data for this response, contains the id to show the
request was received and processed.</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="responseData">
        <xs:sequence>
          <xs:element ref="id"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:schema>
```